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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/792,018	03/02/2004	Marko Lampinen	944-005.027	1383
4955 7590 07/20/2007 WARE FRESSOLA VAN DER SLUYS & ADOLPHSON, LLP BRADFORD GREEN, BUILDING 5 755 MAIN STREET, P O BOX 224 MONROE, CT 06468			EXAMINER BURD, KEVIN MICHAEL	
			ART UNIT 2611	PAPER NUMBER
			MAIL DATE 07/20/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/792,018

Applicant(s)

LAMPINEN ET AL.

Examiner

Kevin M. Burd

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-7, 9-12, 14-18 and 20-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-7, 9-12, 14-18 and 20-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

1. This office action, in response to the amendment filed 5/29/2007, is a final office action.

Response to Arguments

2. Applicant's arguments filed 5/29/2007 have been fully considered but they are not persuasive. Applicant submits the signal stream in the space-time transmit diversity transmission of Onggosanusi is different from a signal stream in the space-time transmit diversity transmission (page 7-8 in the remarks). The examiner disagrees. Onggosanusi discloses the claimed limitations. The system of Onggosanusi discloses the advantages of the system in paragraph 0006 as stated in the previous office action. In addition, Onggosanusi discloses the transmit diversity allows for higher data rate transmissions (paragraph 0007). The use of multiple antennas will improve the SNR of the signal, increasing the quality of the received signal.

For these reasons, and the reasons stated in the previous office action, the rejections of the claims are maintained and stated below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 3-7, 9-12, 14-18 and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petre et al (US 7,158,558) in view of Onggosanusi et al (US 2002/0196842).

Regarding claims 3, 6, 7, 9, 11, 12, 14, 17, 18, 20 and 22-25, Petre discloses a method of communication using a common pilot channel (CPICH) in a W-CDMA receiver (column 1, lines 19-34). The receiver receives the CPICH (column 13, line 34 to column 14 line 2). The signal is equalized using chip level equalization and the equalized CPICH channel is despread (column 6, line 62 to column 7, line 12 and figure 3). Petre does not disclose estimating the signal to interference ratio (SINR) from the despread CPICH. Onggosanusi discloses the W-CDMA receiver shown in figure 3. The CPICH channel is despread in the receiver (paragraph 0056). The SINR is determined from the despread CPICH channel in the basis selector 84 (paragraph 0069). This value is input to the joint interference cancellation and detector unit 88 in figure 3. The removal of the channel effect is advantageous since it allows the originally transmitted data to be properly recognized and recovered (paragraph 0006). For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the estimation and interference detection and cancellation method of Onggosanusi in to the method of Petre. The combination discloses the transmitter comprises multiple antennas (Onggosanusi, figure 3 and paragraph 0049). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the antenna diversity of Onggosanusi into the method of Petre. Multiple antennas for transmission allow multiple paths to be received at the receiver and fading

and other interference can be overcome, which allows the signal to be received with fewer errors.

Regarding claims 4 and 16, the combination discloses the method comprises combining the channel and chip level filtering at the equalizer. A combination of the channel and the receiver's chip level filtering at the equalizer can be seen as a virtual channel.

Regarding claims 5, 10 and 15, the combination discloses oversampling the received signal (Petre, column 15, lines 10-43).

Regarding claim 21, the receiver is in a mobile terminal.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin M Burd
7/19/2007


KEVIN BURD
PRIMARY EXAMINER